



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,596	07/11/2003	John J. Osborn	A-71927/MAK	2945
32940	7590	10/05/2005	EXAMINER	
DORSEY & WHITNEY LLP 555 CALIFORNIA STREET, SUITE 1000 SUITE 1000 SAN FRANCISCO, CA 94104			SHENG, TOM V	
			ART UNIT	PAPER NUMBER
			2677	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/617,596	<b>Applicant(s)</b> OSBORN, JOHN J.	
	<b>Examiner</b> Tom V. Sheng	<b>Art Unit</b> 2677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-22 is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-16 and 23-27 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                               |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/20/2003</u> | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The inventive features of utilizing an optical reflecting surface 410, which moves in the x-y plane in response to manipulation of the control element, and fixed position optical emitter 420 and optical detector 430, critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Referring to fig. 5A and 5B and page 14, line 1 through page 15, line 3, the applicant discloses the criticality of fixed position optical emitter and detector that emit and detect the position of a moveable reflective surface, due to the differences on the surface at microscopic levels. In order to determine the position accurately, the reflective surface is coupled to the control element via a pantographic mechanism, thus ensuring a uniform response. It is not enabling to simply cite that the x-y movement of the single control element is detected by a light emitting element and a light detecting element.

### ***Claim Rejections - 35 USC § 102***

Art Unit: 2677

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Osborn et al. (US 5,821,921), hereinafter the '921 reference.

As for claim 1, '921 reference teaches an absolute coordinate single control element device that enables user control of a computer cursor and emulation of mouse clicks, the device comprising:

a single control element (handle 12; fig. 1) manipulable by a user of said device (grippable by a hand); a surface (working surface 13) defining an x-y plane whereon said element is manipulable by said user (handle 12 moveable over the working surface 13; see column 2, lines 27-43);

means for resolving user movement of said single control element relative to said x-y plane of said surface (Y motion detector at fixed lower base 21; fig. 2D; and X motion detector at intermediate platform 26; fig. 2C; column 2, lines 44-57 and column 3, lines 34-40) and for outputting a computer recognizable signal therefrom (inherent in order to control the movement of a computer generated cursor; column 1, lines 32-37); and

means for recognizing user manipulation of said single control element in an axis normal to said x-y plane (pressure actuated switch 42 under the handle 12; fig. 3) and for discerning therefrom at least one emulated mouse click (works as a mouse push

Art Unit: 2677

button; column 3, lines 41-48);

wherein relative position of said single control element (handle 12) on said x-y plane of said surface provides said user with information as to relative position of a cursor on a computer display controlled by said device (inherently the detected X and Y motion information are sent to the computer for a correlated display as a cursor).

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Osborn (US 6,107,991), hereinafter the '991 reference.

As for claim 1, '991 reference teaches an absolute coordinate single control element device that enables user control of a computer cursor and emulation of mouse clicks, the device comprising:

a single control element (handle 12; fig. 1) manipulable by a user of said device (grippable by a hand); a surface (working surface 13) defining an x-y plane whereon said element is manipulable by said user (handle 12 moveable over the working surface 13; see column 1, line 66 through column 2, line 21);

means for resolving user movement of said single control element relative to said x-y plane of said surface (measure X movement by counting light pulses by detecting light at detectors 38 via screen 29b from light source 26b and Y movement by counting light pulses by detecting light at detectors 39 via screen 29a from light source 26a; column 2, line 22 through column 3, line 13) and for outputting a computer recognizable signal therefrom (inherent in order to control the movement of a computer generated cursor); and

Art Unit: 2677

means for recognizing user manipulation of said single control element in an axis normal to said x-y plane (when pushed down, the handle 12 would close circuit with a foil indicating a "pin down") and for discerning therefrom at least one emulated mouse click (the actuation inherently emulates a mouse click or push of a mouse button; column 2, lines 6-13);

wherein relative position of said single control element (handle 12) on said x-y plane of said surface provides said user with information as to relative position of a cursor on a computer display controlled by said device (inherently the detected X and Y motion information are sent to the computer for a correlated display as a cursor).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 8-16 and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg (US 6,061,004) in view of Danish et al. (US 4,444,997).

As for claim 1, Rosenberg teaches an absolute coordinate single control element device that enables user control of a computer cursor and emulation of mouse clicks, the device comprising:

a single control element manipulable by a user of said device (user manipulable object 12; fig. 1; column 6, lines 38-44; for example in the form of a stylus-receiving user

Art Unit: 2677

object 274 and may include stylus 280; fig. 7a & 7b; column 24, line 48 through column 25, line 10);

means for resolving user movement of said single control element relative to an x-y plane of a surface and for outputting a computer recognizable signal therefrom (mechanical interface apparatus 14 have position sensors for tracking the movement of object 12 relative to a pad 24 or ground surface 31, relating the position information to electronic interface 16, which, in turn, provides position information to host computer 18; ; column 7, lines 12-34); and

wherein relative position of said single control element on said x-y plane of said surface provides said user with information as to relative position of a cursor on a computer display controlled by said device (the position of object 12 in local frame 28 corresponds to cursor position in host frame 26 on the display screen 20; column 9, lines 47-56; column 6, lines 45-61).

Moreover, Rosenberg teaches a hand-weight safety switch that would engage in the vertical direction when user's hand is rested on the object 12 and would allow haptic feedback or indexing. This, however, does not lend itself to an emulated mouse click, nor is it obvious. Thus, Rosenberg does not teach the absolute coordinate device that further comprises means for recognizing user manipulation of said single control element in an axis normal to said x-y plane and for discerning therefrom at least one emulated mouse click. Further, Rosenberg does not teach a comprised surface defining an x-y plane whereon said element is manipulable by said user.

On the other hand, Rosenberg teaches that the area of movement of the object 12 is very small, as defined by the dashed lines 25 on the touch pad 24 (column 7, lines 20-25). One of ordinary skill in the art would recognize that equivalently the mechanical interface 14 could further be provided with an integrated surface having an outline defining the area of manipulation. This is advantageous as the user could easily recognize the boundaries of object manipulation without trial and error with each use. Therefore, it would have been obvious to provide an integrated surface upon which the object 12 rest since a visually defined frame of manipulation could be identified readily. Further, obviously, one can make the pad foldable if portability is of concern.

Similarly, Danish et al. teach a device for generating signals representing the position coordinates of a stylus on a reference surface. In particular, Danish's pointing stylus 21 (fig. 4) has a spring-loaded electric contact pushbutton 25, normally open and closing when a moveable tips 21a of the stylus is pressed on the reference surface (column 3, lines 4-12). One of ordinary skill in the art would recognize that the pushbutton 25 could be used to emulate a mouse click, just as operating either switch 11 or 12 of a joystick of a different embodiment.

Therefore, it would have been obvious to further provide a spring-loaded contact button 25 in Rosenberg's object 274 or stylus 280 because of the advantage for providing an emulated mouse click, especially by the same finger(s) controlling the movement.

As for claim 2, modified Rosenberg does not teach the incorporation of a surface that exhibits a dynamic coefficient of friction, as claimed. However, the incorporation of



Art Unit: 2677

such a surface would have been obvious to one of ordinary skill in the art, in light of the need to maintain the position of the control element during clicking.

As for claims 3 and 4, obviously a single push would represent either a left or right mouse click and a double push would represent a corresponding double click, to one of ordinary skill in the art.

As for claim 8, Rosenberg's mechanical interface 14 is a pantographic mechanism with a first end coupled to object 12 and a second end coupled to axis A.

As for claims 9-11, Rosenberg teaches other alternatives to object 12 that can be accessed by user's digits, hand, and foot. See column 25, lines 11-29.

As for claim 12, obviously the absolute coordinate device could be designed as part of a keyboard or separate but connectable to a keyboard, based on need or preference of users.

As for claim 13, obviously the device can be used to control menu selection on a kiosk as designed based on the need or preference of users.

As for claims 14 and 15, the choice of material is obviously based on the surface property desired.

As for claim 16, a resistive, capacitive or other means of sensing under the touch surface is a well-known means of detecting the position of an object such as a stylus.

Claim 23 is rejected per analyses of claims 1 and 2.

Claim 24 is rejected per analyses of claims 9-11.

Claims 25-26 are rejected per analyses of claims 3-4 and that detecting an upward movement is merely for emulating additional type(s) of mouse click.

Claim 27 is rejected per analyses of claims 14-15.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg and Danish et al. as applied to claim 1 above, and further in view of Tukker (US 6,806,959 B2).

As for claim 5, Rosenberg's mechanical interface 14 is a pantographic mechanism with a first end coupled to object 12 and a second end coupled to axis A. However, the sensing of movement in the x-y plane is done by two non-optical sensors 52 that sense the movements of members of the linkage 30, instead of optically sensing the movement of the single control element in the x-y plane.

Tukker teaches a device for the inspection of surfaces. In particular, he teaches using one light source 1 and one or two light detectors 16 or 17 that detects defects on a moving wafer 13 and determines the positions of the defects. See fig. 1 and column 2, line 36 through column 4, line 52. One of ordinary skill in the art, would recognize that this system could similarly be used instead of sensors 52, as both methods are functionally equivalent. Therefore, it would have been obvious to use light source and light detector(s) with respect to the x-y plane as an equivalent way of detecting control element position.

***Allowable Subject Matter***

9. Claims 17-22 are allowed.

Art Unit: 2677

10. Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: none of the prior arts of record teaches the limitations "a reflective element coupled for movement along an x-axis and a y-axis of said x-y plane responsive to movement of said single element ... stationary light transmitter ... stationary light detector ... " of claim 6, "a reflective element coupled to said second end of said pantographic mechanism for movement along an x-axis and a y-axis of said x-y plane responsive to movement of said single element ... stationary light transmitter ... stationary light detector ... " of claims 7 and 17. Claims 18-22 are dependent on claim 17.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V. Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2677

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free):

Tom Sheng  
September 29, 2005



DENNIS-DOON CHOW  
PRIMARY EXAMINER